

**Wavelength Shifter
(With Stabilization and Data Encoding)**

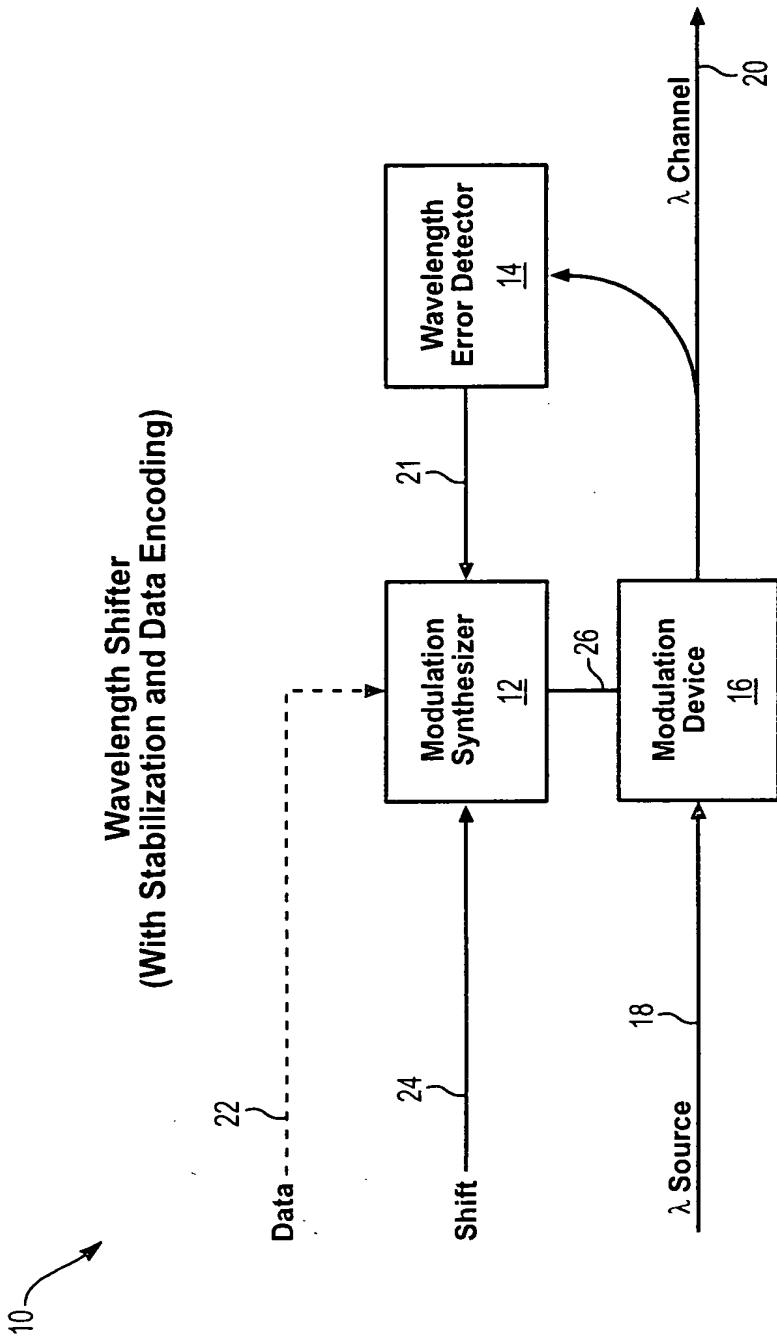


FIG. 1

**Quadrature Mach-Zehnder
Modulation Device**

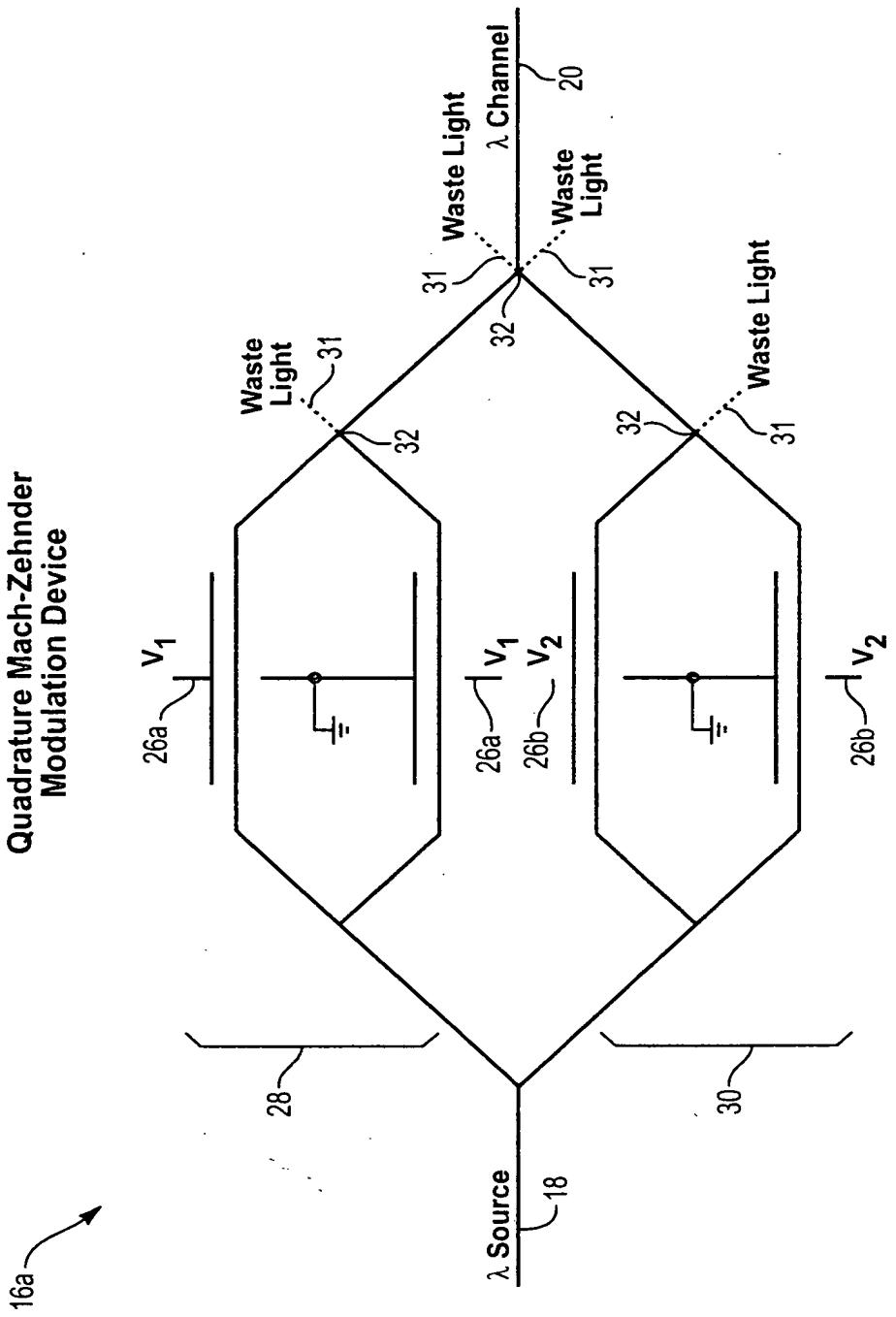


FIG. 2

**Mach-Zehnder Device
Transfer Function**

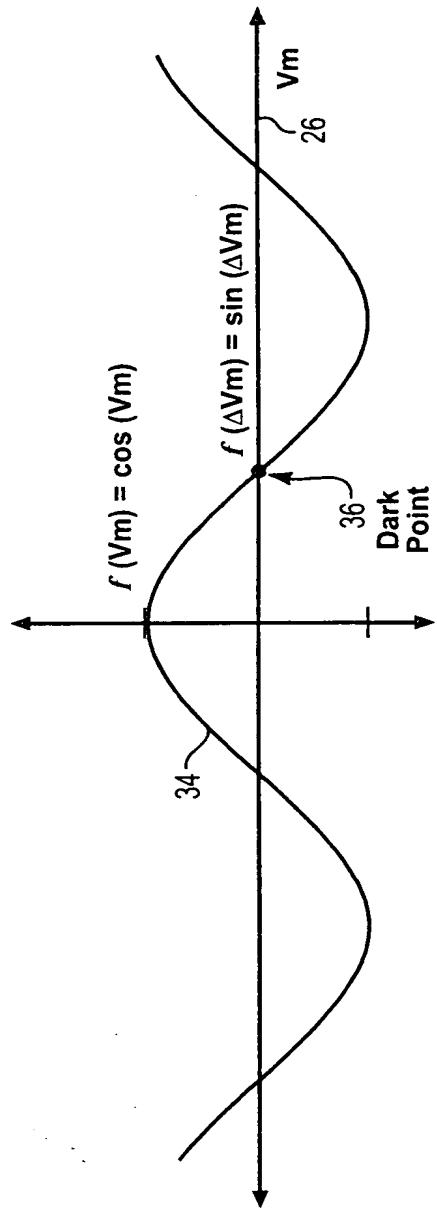


FIG. 3

Modulation Synthesizer

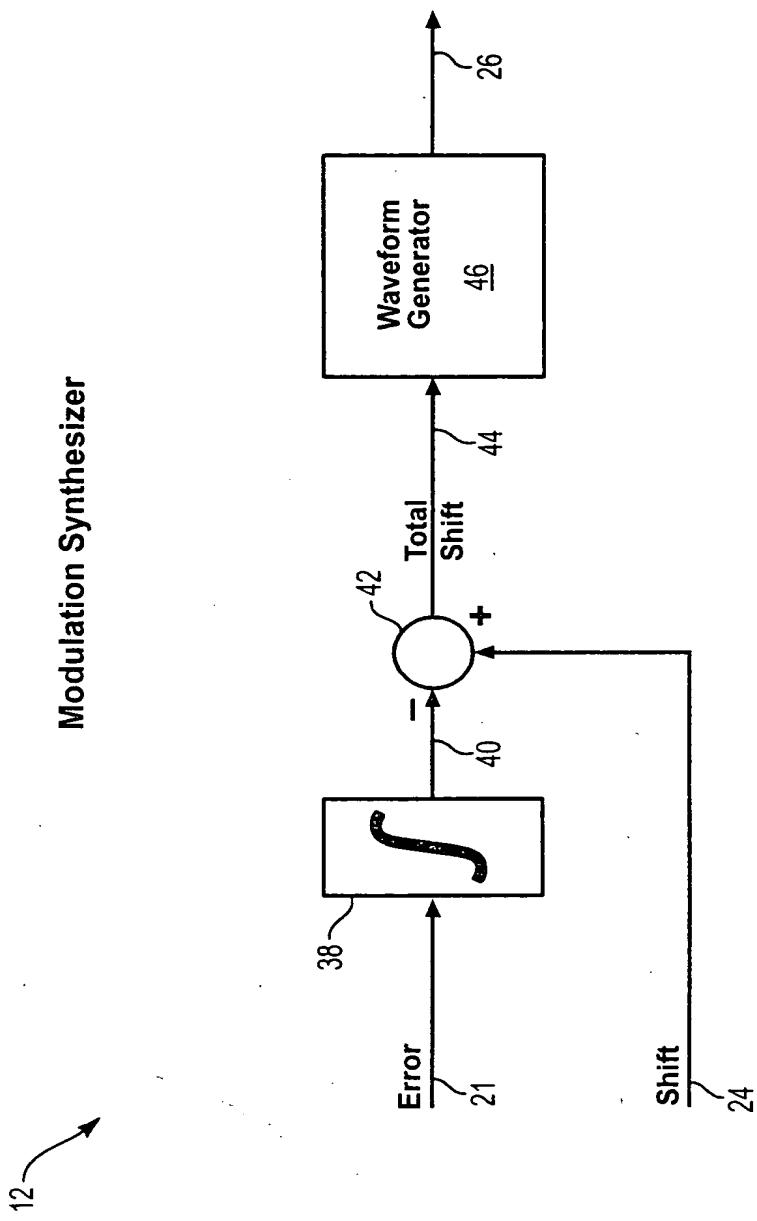


FIG. 4

12

Quadrature Modulation Synthesizer
(With On/Off Data Keying)

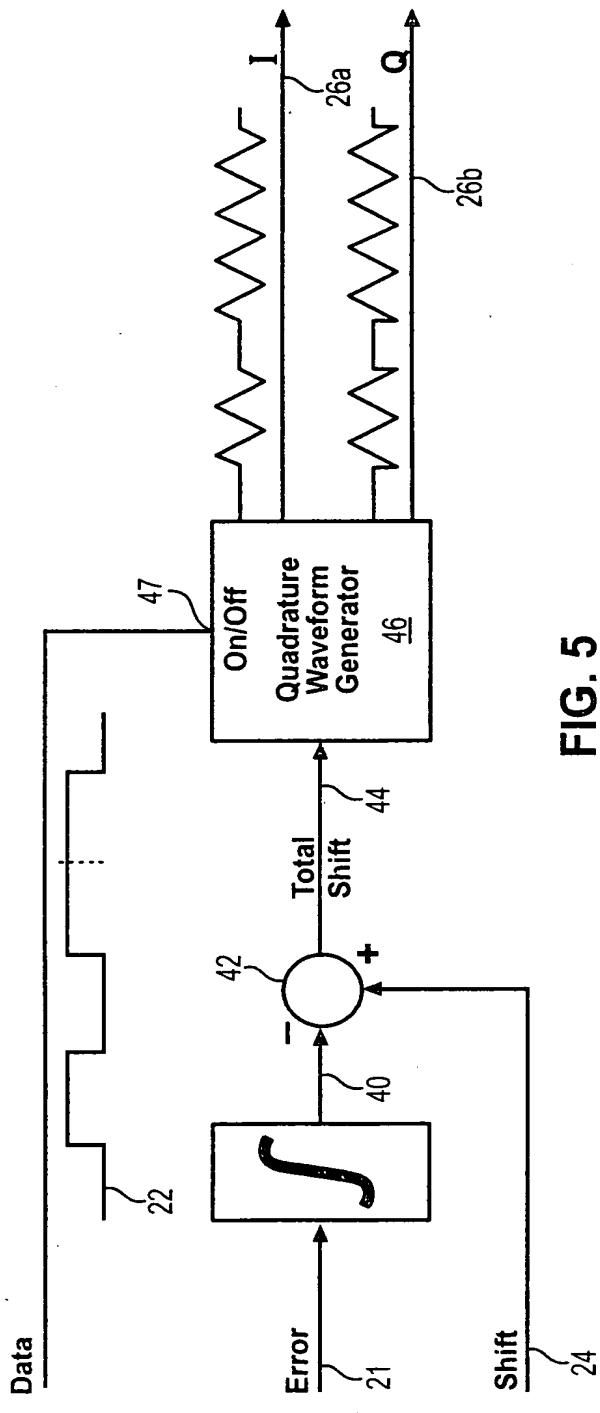


FIG. 5

Phase Modulation Device

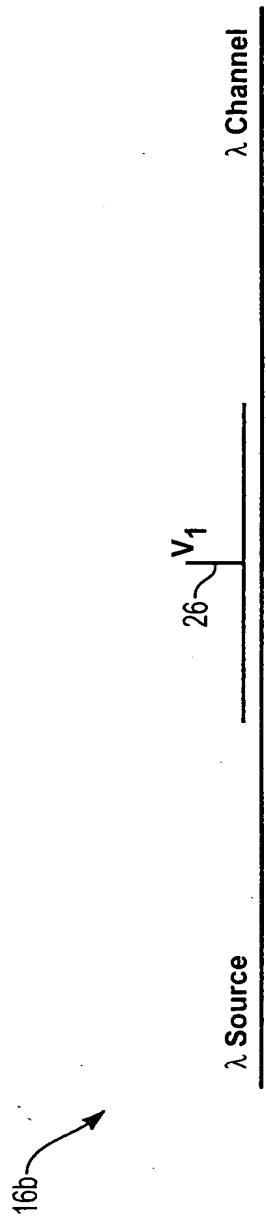


FIG. 6

**Modulation Synthesizer
(With Frequency Shift Keying)**

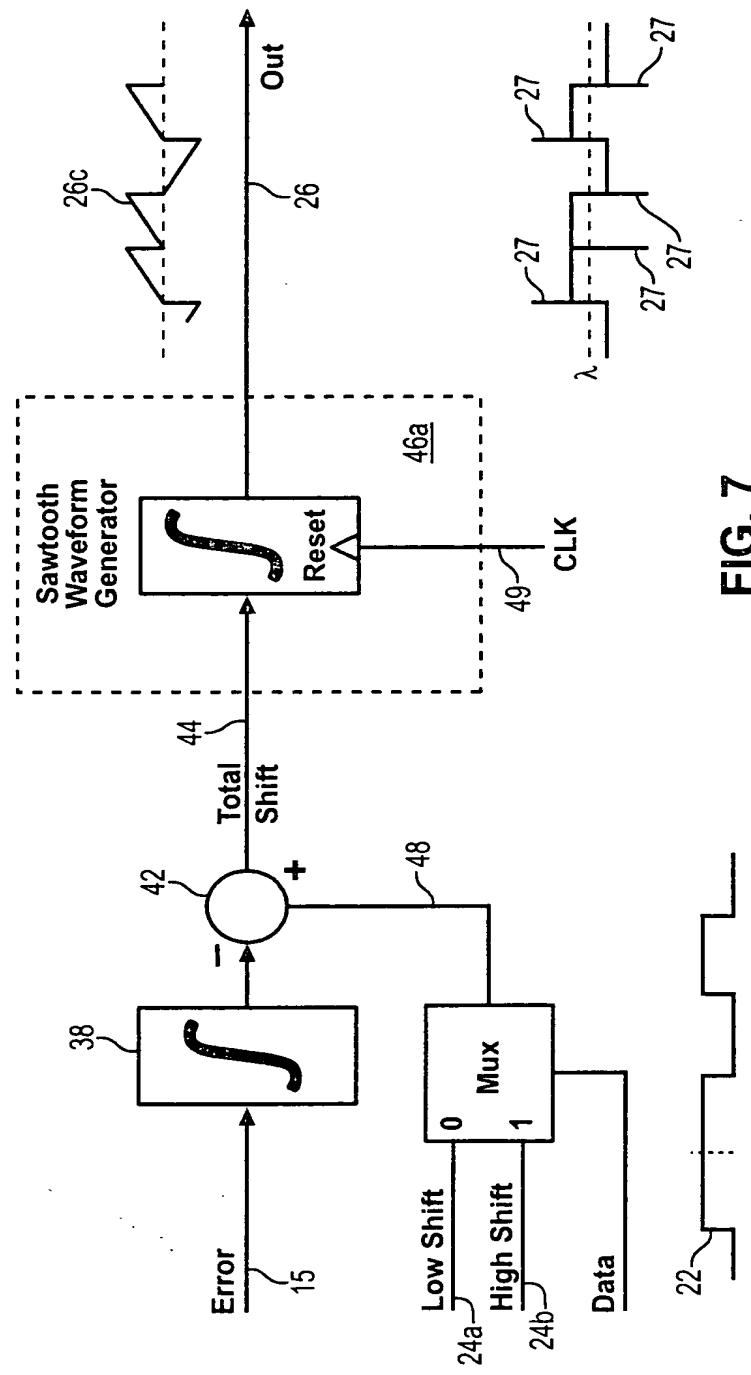


FIG. 7

**Wavelength Error Detector
(Fixed Wavelength)**

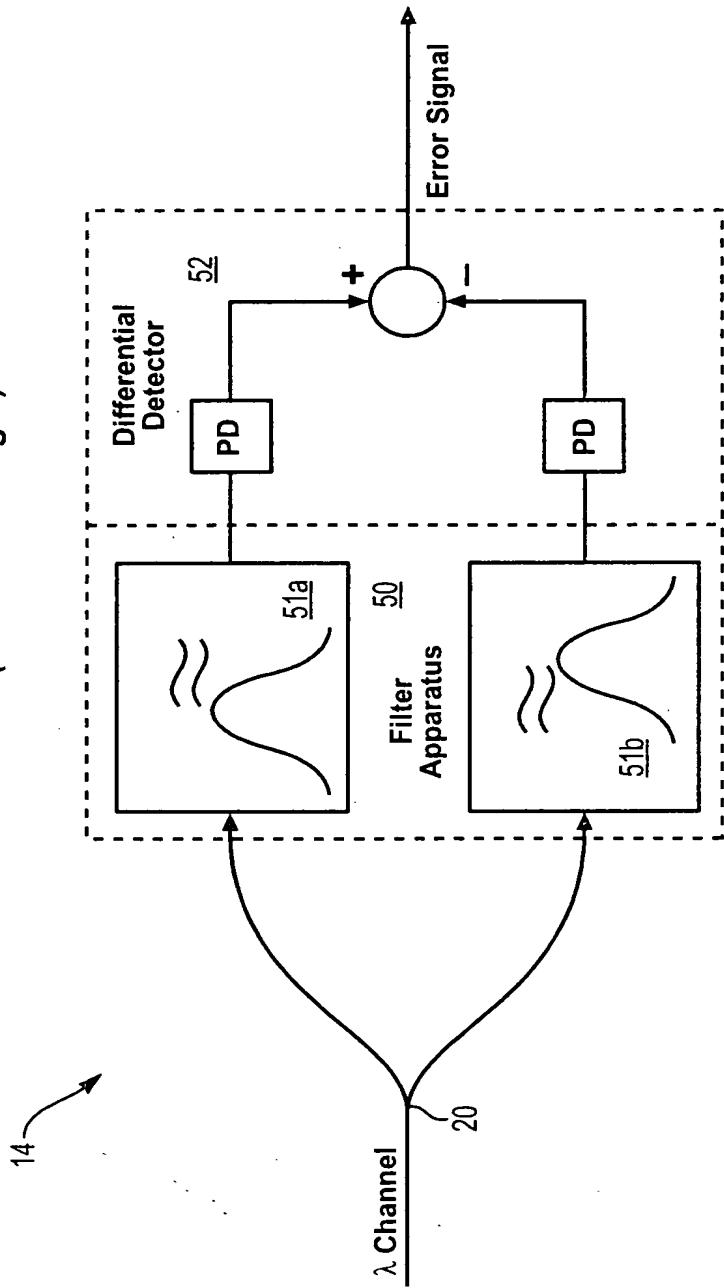
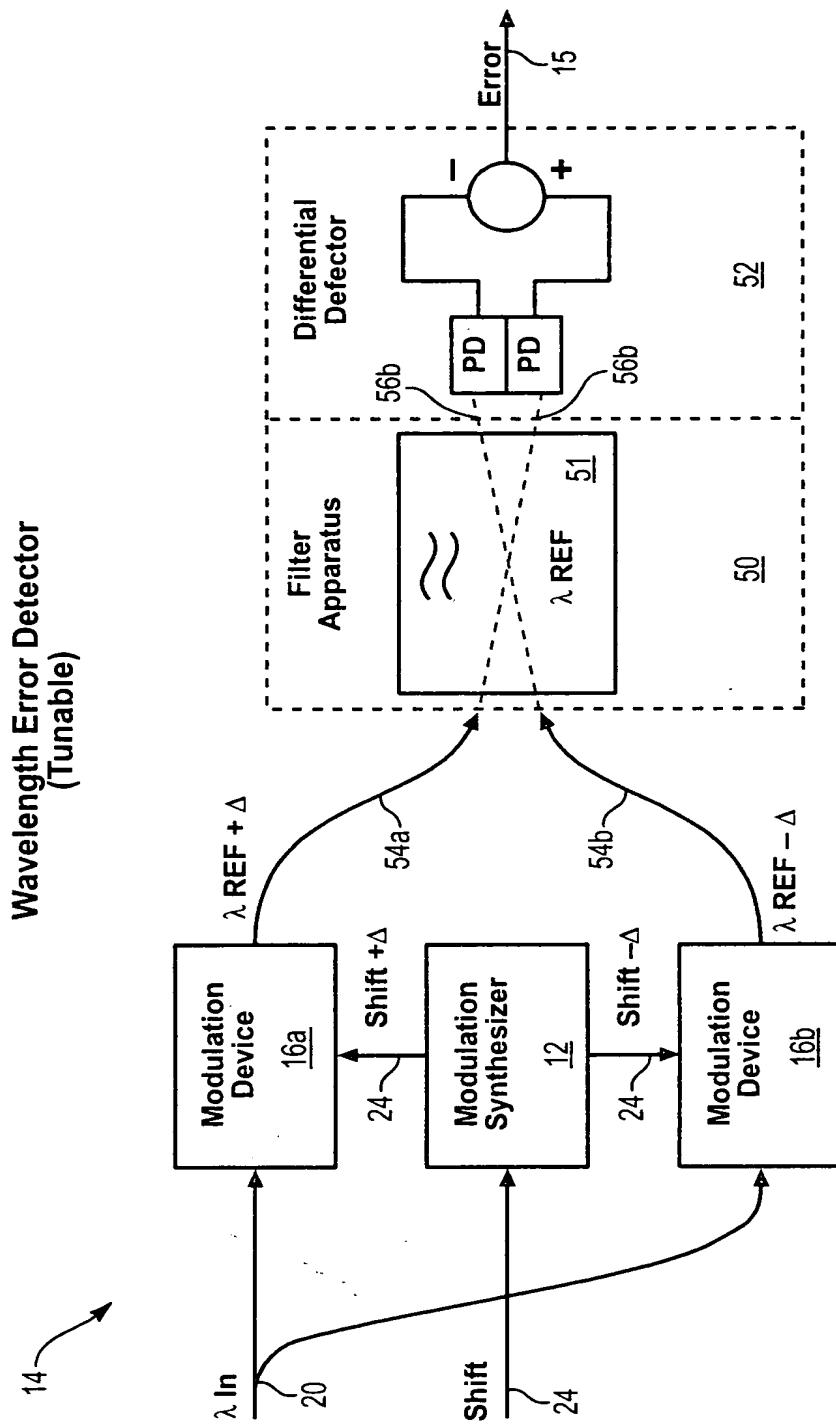


FIG. 8

FIG. 9



Wavelength Error Detector (Tunable)

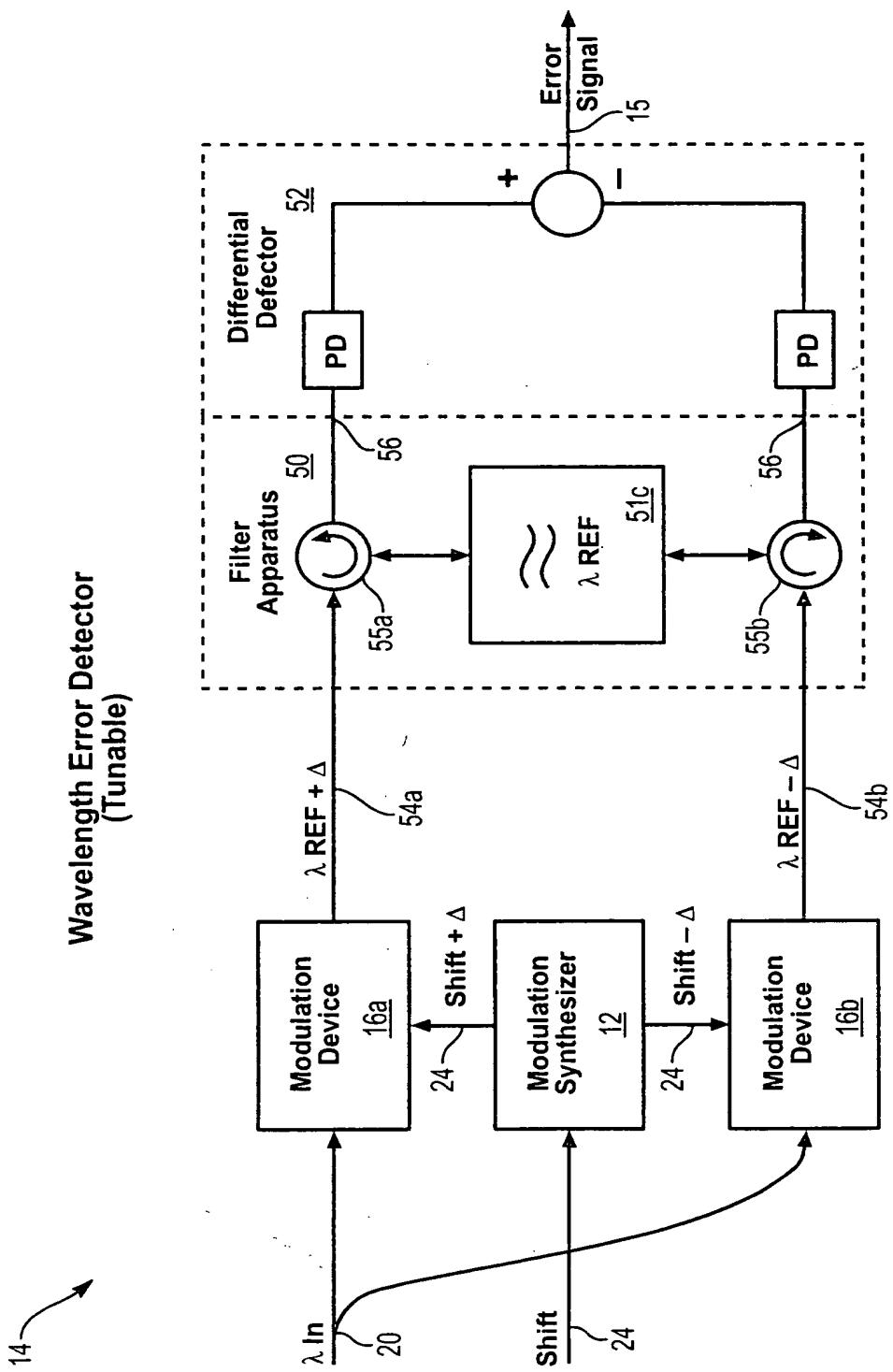


FIG. 10

Channel Allocation Mechanism

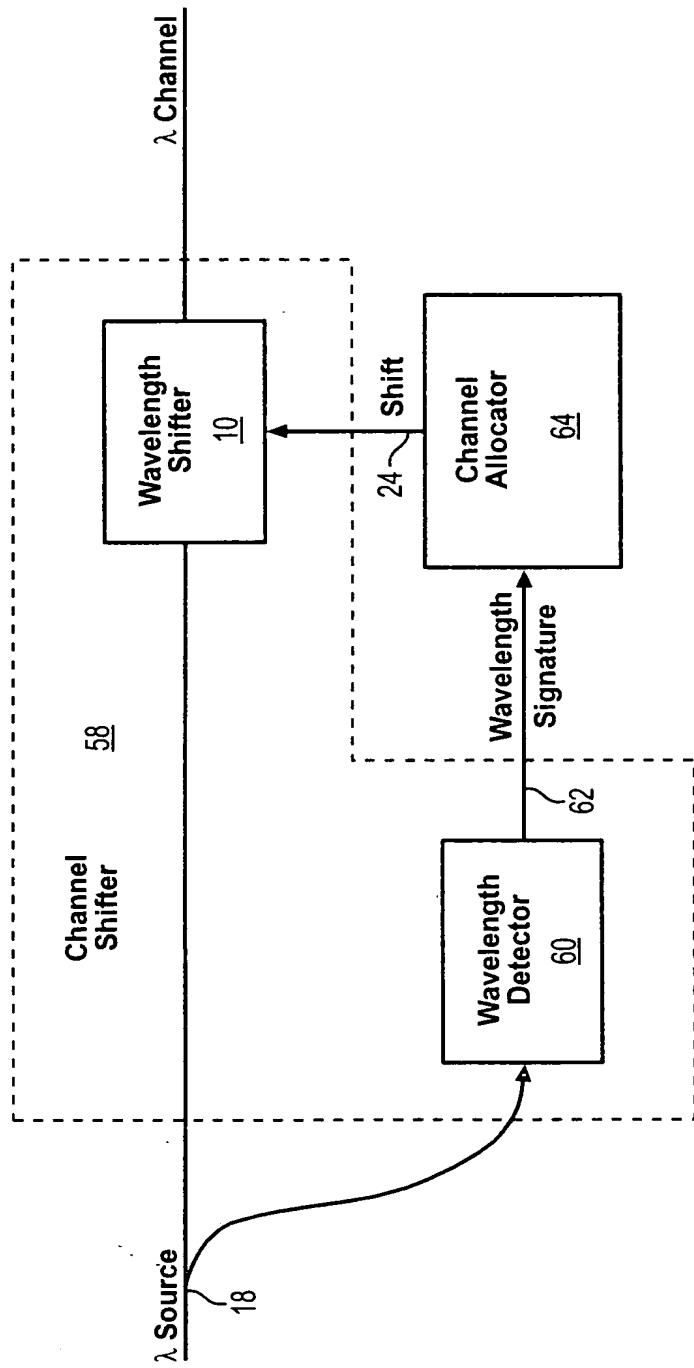
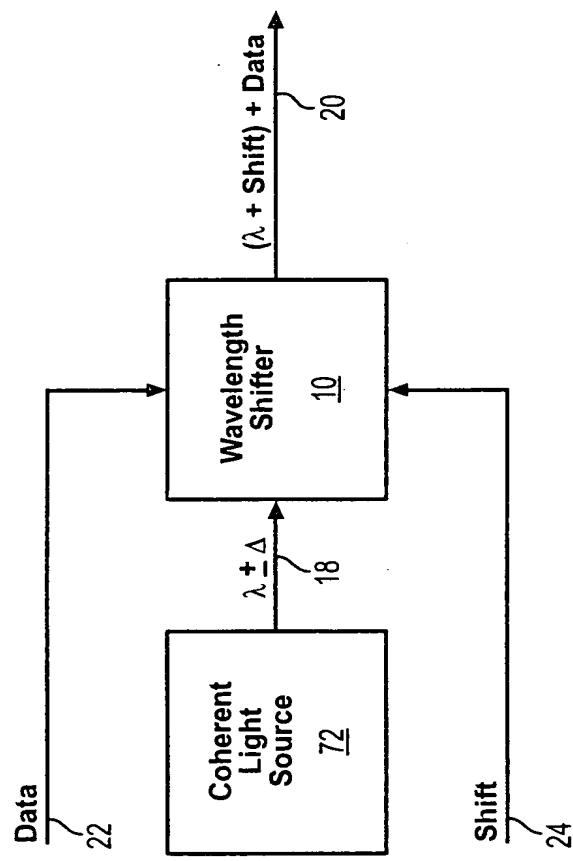


FIG. 11

Tunable Wavelength Stabilized Transmitter



70

FIG. 12

Recursive Wavelength Shifter

74

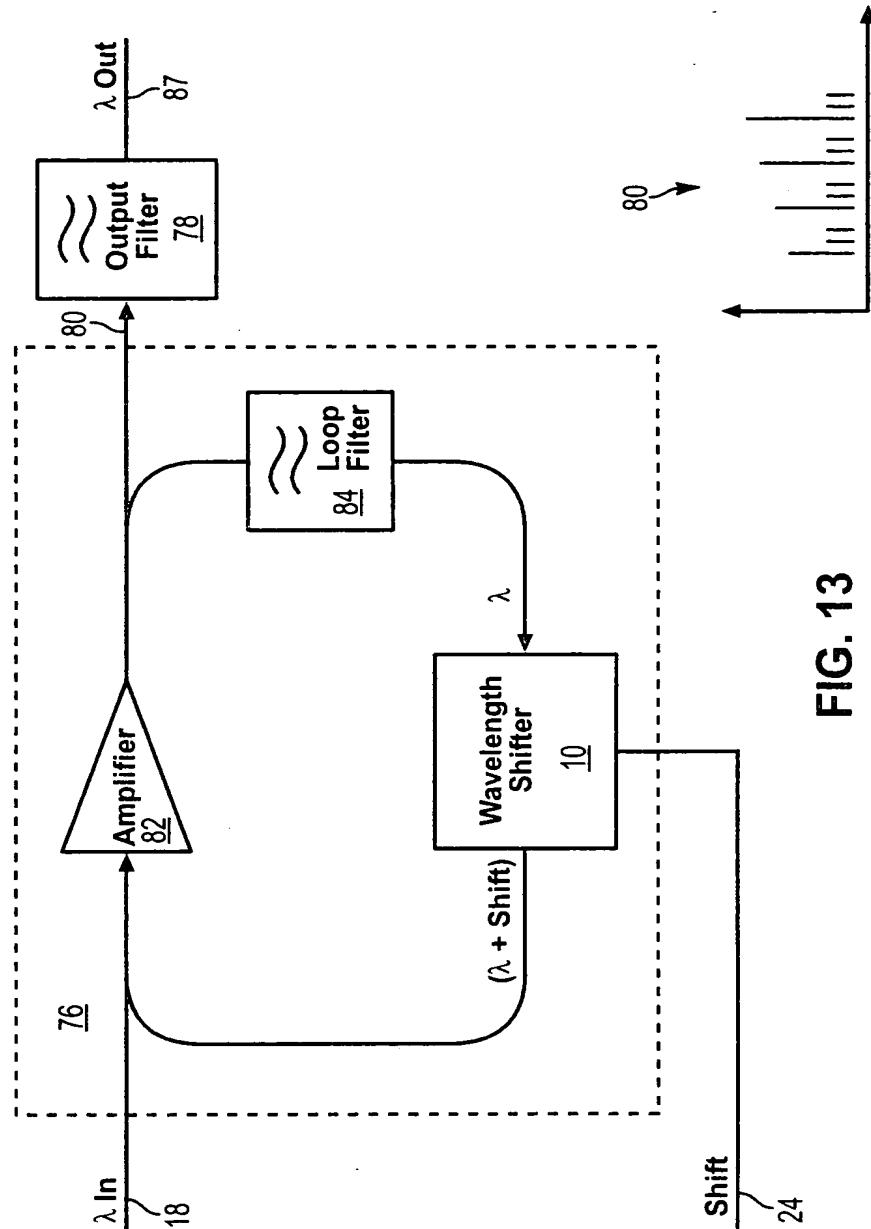


FIG. 13

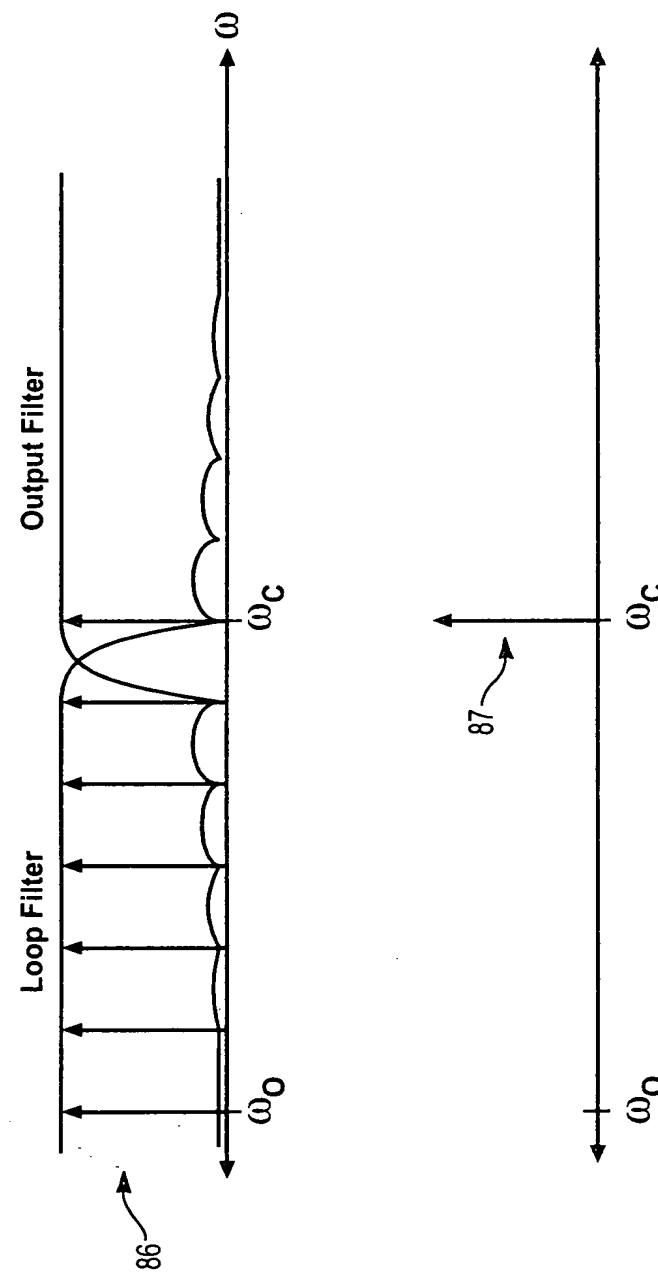


FIG. 14